

WHAT IS CLAIMED IS:

1. A method comprising the steps:
 - a. detecting mid-infrared radiation emitted from a body surface of a subject using a non-invasive instrument comprising a mid-infrared emission detector; and,
 - b. determining a radiation signature of said mid-infrared radiation, to determine an analyte concentration in a tissue of said subject.
2. The method of claim 1, wherein said method is non-invasive, and wherein said subject is a human.
3. The method of claim 1, wherein said analyte is selected from the group consisting of , metabolic compounds or substances, carbohydrates, sugars, glucose, proteins, peptides, amino acids, fats, fatty acids, triglycerides, polysaccharides, alcohols, ethanol, toxins, hormones, vitamins, bacteria-related substances, fungus-related substances, virus-related substances, parasite-related substances, pharmaceutical compounds, non-pharmaceutical compounds, pro-drugs, drugs, and any precursor, metabolite, degradation product or surrogate marker.
4. The method of claim 3, wherein said analyte is glucose.
5. The method of claim 1, wherein said tissue is selected from the group consisting of skin, blood, body fluids, eye, tear layer of an eye, interstitial fluid, ocular fluid, bone, muscle, epithelium, fat, hair, fascia, organs, cartilage, tendons, ligaments, and mucous membrane.

6. The method of claim 5, wherein said tissue is blood.
7. The method of claim 1, wherein said mid-infrared radiation comprises wavelengths between about 2.5 microns to about 25.0 microns.
8. The method of claim 7, wherein said mid-infrared radiation is within the wavelengths between about 8.0 microns to about 11.0 microns.
9. The method of claim 1, wherein said detecting step further comprises selecting and detecting desired wavelengths of said mid-infrared radiation.
10. The method of claim 9, wherein said selecting of said mid-infrared radiation further comprises filtering said mid-infrared radiation.
11. The method of claim 1, wherein said detecting step and said determining steps further comprise using a microprocessor.
12. A method comprising the steps:
 - a. detecting naturally occurring mid-infrared radiation emitted from a subject using a non-invasive instrument comprising a mid-infrared detector;
 - b. comparing a radiation signature of said mid-infrared radiation to a radiation signature of mid-infrared radiation corresponding to an analyte concentration; and
 - c. analyzing said radiation signature of said mid-infrared radiation from said subject to determine said analyte concentration in a tissue of said subject.

13. The method of claim 12, wherein said analyte is selected from the group consisting of metabolic compounds or substances, carbohydrates, sugars, glucose, proteins, peptides, amino acids, fats, fatty acids, triglycerides, polysaccharides, alcohols, ethanol, toxins, hormones, vitamins, bacteria-related substances, fungus-related substances, parasite-related substances, pharmaceutical compounds, non-pharmaceutical compounds, pro-drugs, drugs, and any precursor, metabolite, degradation product or surrogate marker.
14. The method of claim 13, wherein said analyte is glucose.
15. The method of claim 12, wherein said tissue is selected from the group consisting of skin, blood, body fluids, eye, tear layer of an eye, interstitial fluid, ocular fluid, bone, muscle, epithelium, fat, hair, fascia, organs, cartilage, tendons, ligaments, and mucous membrane.
16. The method of claim 15, wherein said tissue is blood.
17. The method of claim 12, wherein said naturally occurring mid-infrared radiation comprises infrared radiation having wavelengths between about 2.5 microns and about 25.0 microns.
18. The method of claim 12, wherein said detecting step further comprises selecting and detecting desired wavelengths of said naturally occurring mid-infrared radiation.
19. The method of claim 12, wherein said comparing step and said analyzing step further comprise using a microprocessor.

20. A computer system for downloading and storing data, collected according to the method of claim 1, comprising:
 - a. a computer processor;
 - b. a memory which is operatively coupled to said computer processor;
 - c. a communications interface adapted to receive and send data within said computer processor; and
 - d. a computer program stored in said memory which executes in said computer processor.
21. A computer system for downloading and storing data, collected according to the method of claim 12, comprising:
 - a. a computer processor;
 - b. a memory which is operatively coupled to said computer processor;
 - c. a communications interface adapted to receive and send data within said computer processor; and
 - d. a computer program stored in said memory which executes in said computer processor.
22. A method of downloading and storing a subject's measured analyte concentration, comprising the steps of:
 - a. measuring said analyte concentration according to the method of claim 1, using a non-invasive mid-infrared detecting instrument having a communications interface;
 - b. connecting said instrument through said communications interface to a computer system having a computer processor, a computer program which executes in said computer processor, and an analogous communications interface; and
 - c. downloading from said instrument to said computer system said measured analyte concentrations.

23. A method of downloading and storing a subject's measured analyte concentration, comprising the steps of:
- a. measuring said analyte concentration according to the method of claim 12, using a non-invasive mid-infrared detecting instrument having a communications interface;
 - b. connecting said instrument through said communications interface to a computer system having a computer processor, a computer program which executes in said computer processor, and an analogous communications interface; and
 - c. downloading from said instrument to said computer system said measured analyte concentrations.